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## NOTICE OF ALLOWANCE AND FEE(S) DUE

000959 7590 03/17/2004  
LAHIVE & COCKFIELD, LLP.  
28 STATE STREET  
BOSTON, MA 02109

EXAMINER

PATEL, PARESH H

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 03/17/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,385	08/22/2001	Spencer M. Gold	SMQ-080/P6300	1467

TITLE OF INVENTION: TWO-PIN THERMAL SENSOR CALIBRATION INTERFACE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$300	\$1630	06/17/2004

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.**

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I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

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B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status.  
See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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# **PART B - FEE(S) TRANSMITTAL**

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000959 7590 03/17/2004

**LAHIVE & COCKFIELD, LLP.  
28 STATE STREET  
BOSTON, MA 02109**

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1330	\$300	\$1630	06/17/2004

EXAMINER	ART UNIT	CLASS-SUBCLASS
PATEL, PARESH H	2829	324-760000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent); ☐ individual ☐ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

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- ☐ Publication Fee
- ☐ Advance Order - # of Copies \_\_\_\_\_

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- ☐ Payment by credit card. Form PTO-2038 is attached.
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Director for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

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(Date)

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Alexandria, Virginia 22313-1450.**

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000959	7590	03/17/2004	EXAMINER	
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			PATEL, PARESH H	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 03/17/2004

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 100 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 100 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

**Notice of Allowability**

Application No.

09/935,385

Examiner

Paresh Patel

Applicant(s)

GOLD ET AL.

Art Unit

2829

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 02/05/2004 and 10/17/2003.
2. ☒ The allowed claim(s) is/are 1-3 and 6-18.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
  - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☒ including changes required by the proposed drawing correction filed 17 October 2003, which has been approved by the Examiner.
  - (c) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. 02/04.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                            |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>attached herewith</u> |
| 3 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. <u>of 10/03</u> | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                                    |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material                     | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                   |
|  | 9 <input checked="" type="checkbox"/> Other <u>Copy of Supplemental Preliminary Amendments</u>        |

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***Allowable Subject Matter***

Claims 1-3, 6-18 allowed.

The following is an examiner's statement of reasons for allowance: Prior art of record including arguments filed on 10/17/2003 does not teach or suggest a thermal sensor in an integrated circuit that includes register and an input/output interface, having an input node to receive an input trigger to trigger the thermal sensor to output on an output node of the interface an output signal having a first value, second value and a third value as further defined in claim 1 and 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Burns on 02/02/04.

The application has been amended as follows:

In the Claims:

1. (Previously Presented) A thermal sensor in an integrated circuit comprising:  
a register to hold a response of said thermal sensor; and  
an Input/Output (I/O) interface having an input node to receive an input trigger to trigger said thermal sensor to output on an output node of said interface an output signal that includes a first value that indicates said thermal sensor is sensing the temperature of said integrated circuit, a second value representative of said response held by said register, and a third value generated by said thermal sensor that indicates said thermal sensor is functioning properly.
2. (Previously Presented) The thermal sensor of claim 1, wherein said Input/Output interface comprises a digital Input/Output interface having at least one input node capable of receiving a digital input and at least one output node capable of asserting a digital output.
3. (Previously Presented) The thermal sensor of claim 2, wherein said input node and output node comprises at least two electrical contacts capable of providing an off chip interface.
- Claims 4 and 5 (Cancelled).
6. (Original) The thermal sensor of claim 1, wherein said integrated circuit comprises a microprocessor.
7. (Original) The thermal sensor of claim 1, wherein said integrated circuit comprises a very large scale integration (VLSI) circuit.

8. (Previously Presented) The thermal sensor of claim 1, wherein said thermal sensor appends said value that indicates said thermal sensor is functioning properly to said response of said thermal sensor.
9. (Original) The thermal sensor of claim 1, wherein said thermal sensor is a calibrated sensor.
10. (Original) The thermal sensor of claim 1, wherein said thermal sensor is an active sensor.
11. (Currently Amended) In an integrated circuit having a thermal sensor, a method for said thermal sensor to provide an indication that said thermal sensor is functioning properly, the method comprising the steps of:
- asserting an input signal at a first Input/Output pin of said thermal sensor to initiate thermal sensing of said integrated circuit by said thermal sensor;
  - sensing by said thermal sensor a temperature of said integrated circuit; and
  - asserting an output signal on a second Input/Output pin of said thermal sensor by said thermal sensor wherein said output signal provides a first value indicating said thermal sensor is sensing said temperature said step of sensing is being performed, a second value representative of said temperature of said integrated circuit, and a third value that ~~and~~ provides said indication that said thermal sensor is functioning properly.
12. (Original) The method of claim 11 further comprising the step of writing said temperature of said integrated circuit to a register of said thermal sensor.

13. (Original) The method of claim 11, further comprising the step of asserting a status signal on said second Input/Output pin of said thermal sensor during said step of sensing by said thermal sensor a temperature of said integrated circuit to indicate that said sensing is occurring.
14. (Original) The method of claim 11, wherein said output signal comprises a first portion and a second portion.
15. (Original) The method of claim 14, wherein said first portion of said output signal comprises a value representative of said temperature of said integrated circuit.
16. (Original) The method of claim 14, wherein said second portion of said output signal comprises a value representative of said indication that said thermal sensor is functioning properly.
17. (Original) The method of claim 15, wherein said value representative of said temperature indicates an absolute temperature.
18. (Original) The method of claim 15, wherein said value representative of said temperature indicates a relative temperature.

Claims 19 through 29 (Cancelled).



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The following changes to the drawings have been approved by the examiner and agreed upon by applicant: in drawing fig. 2, replace 21 with 31. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 571-272-1968. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Paresh Patel  
Feb. 06, 2004



**KAMAND CUNEO**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**